



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No.	:	10/606,201	Confirmation No.:
Applicant	:	Tammy Burd Mehta et al.	
Filed	:	June 25, 2003	
TC/A.U.	:	1744	
Examiner	:	Not yet assigned	
Docket No.	:	100/05231	
Customer No.	:	021569	
Title	:	Manipulation of Microparticles in Microfluidic Systems	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

The references cited on the attached form PTO-1449 are being called to the attention of the Examiner. This application is a continuation of U.S. Patent application number 09/510,626, filed February 22, 2000. All references cited in the attached form 1449 have been previously cited in the parent application. Copies of documents are therefore not being provided pursuant to 37 CFR §1.98(d). If copies of the references are not available to the Examiner, the Examiner is invited to contact the undersigned.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application, and the references be made of record therein and appear among the "references cited" on any patent to issue therefrom.

As provided for by 37 CFR §1.97(g) and (h), no inference should be made that the information and references cited are prior art merely because they are in this statement and no

Appl. No. 10/606,201
Tammy Burd Mehta et al.

representation is made that a search has been conducted or that this statement encompasses all possible relevant information.

Applicants believe that no fee is required for submission of this statement, since it is being submitted within three months of the filing date or prior to the first Office Action. However, if a fee is required, the Commissioner is authorized to charge such fee to Deposit Account No. 03-0177. Please charge any additional fees or credit any overpayment to the above-noted deposit account.

Respectfully submitted,



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Approved for use through 10/31/02, OMB 0651-0031

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known		
		Application Number	10/606201	
		Filing Date	June 25, 2003	
		First Named Inventor	Tammy Burd Mehta	
		Art Unit	1639	
Examiner Name	My Chau Tran			
Sheet		of	Attorney Docket Number	100/05231

U.S. PATENT DOCUMENTS					
Examiner Initials	Cite No.	Document No.	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appeal
		Number - Kind Code (if known)			
	AA	US-4,990,403	06-28-1983	Batchelder	
	AB	US-4,863,849	09-05-1989	Malmede	
	AC	US-4,908,112	03-13-1990	Pace	
	AD	US-4,971,903	11-20-1990	Hyman	
	AE	US-5,122,614	06-16-1992	Zalipsky	
	AF	US-5,126,022	06-30-1992	Soane et al.	
	AG	US-5,187,085	02-16-1993	Lee et al.	
	AH	US-5,202,231	04-13-1993	Dmanac et al.	
	AI	US-5,302,509	04-12-1994	Cheeseman	
	AJ	US-5,304,487	04-19-1994	Wilding et al.	
	AK	US-5,332,666	07-26-1994	Prober et al.	
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	AM	US-5,525,711	06-11-1996	Hawkins et al.	
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	AO	US-5,585,069	12-17-1996	Zanzucchi et al.	
	AP	US-5,587,128	12-24-1996	Wilding, et al.	
	AQ	US-5,593,838	01-14-1997	Zanzucchi et al.	
	AR	US-5,603,361	02-18-1997	Cherukuri et al.	
	AS	US-5,635,358	06-03-1997	Wilding et al.	
	AT	US-5,637,469	06-10-1997	Wilding et al.	
	AU	US-5,650,294	07-22-1997	Dolence et al.	
	AV	US-5,653,939	08-05-1997	Hollis, et al.	
	AW	US-5,699,157	12-16-1997	Parce	
	AX	US-5,719,060	02-17-1998	Hutchens et al.	
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	AZ	US-5,750,015	05-12-1998	Soane et al.	
	BA	US-5,755,942	05-26-1998	Zanzucchi et al.	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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		Art Unit	1639	
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	BB	US-5,779,868	07-14-1998	Parce et al.	
	BC	US-5,798,210	08-25-1998	Canard	
	BD	US-5,800,690	09-01-1998	Chow et al.	
	BE	US-5,842,787	12-01-1998	Kopf-Sill et al.	
	BF	US-5,852,495	12-22-1998	Parce	
	BG	US-5,856,174	01-05-1999	Lipshutz, et al.	
	BH	US-5,858,195	01-22-1999	Rameey	
	BI	US-5,863,502	01-26-1999	Southgate et al.	
	BJ	US-5,869,004	02-09-1999	Parce et al.	
	BK	US-5,876,675	03-02-1999	Kennedy	
	BL	US-5,880,071	03-09-1999	Parce et al.	
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	BN	US-5,885,470	03-23-1999	Parce et al.	
	BO	US-5,942,443	08-24-1999	Parce et al.	
	BP	US-5,948,227	09-07-1999	Dubrow	
	BQ	US-5,955,028	09-21-1999	Chow	
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	BT	US-5,958,694	09-28-1999	Nikiforov	
	BU	US-5,959,291	09-28-1999	Jensen	
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	BX	US-5,985,410	10-12-1999	Chow et al.	
	BY	US-5,972,187	10-26-1999	Parce et al.	
	BZ	US-5,976,336	11-02-1999	Dubrow et al.	
	CA	US-5,981,180	11-09-1999	Chandler et al.	
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	CC	US-6,001,231	12-14-1999	Kopf-Sill	
	CD	US-6,004,515	12-21-1999	Parce et al.	
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		First Named Inventor	Tammy Burd Mehta
		Art Unit	1639
		Examiner Name	My Chau Tran
Sheet	of	Attorney Docket Number	100/05231

	CE	US-6,007,690	12-28-1999	Nelson et al.	
	CF	US-6,011,252	01-04-2000	Jensen	
	CG	US-6,012,902	01-11-2000	Parce	
	CH	US-6,042,721	03-28-2000	Dubrow	
	CI	US-6,046,056	04-04-2000	Parce et al.	
	CJ	US-6,235,471	05-22-2001	Knapp et al.	
	CK	US-6,267,858	07-31-2001	Parce et al.	
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	CN	US-6,306,590	10-23-2001	Burd Mehta	
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	CP	US-20010035351	11-01-2001	Simpson et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials	Cite No.	Foreign Patent Document Country Code - Number - Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T
	CQ	WO-9604547	02-15-1998	Lockheed Martin		
	CR	WO-9702357	01-23-1997	Affymetrix, Inc.		
	CS	WO-9800231	01-08-1998	Caliper		
	CT	WO-9800705	01-08-1998	Caliper		
	CU	WO-9800707	01-08-1998	Caliper		
	CV	WO-9802728	01-22-1998	Caliper		
	CW	WO-9805424	02-12-1998	Caliper		
	CX	WO-9822811	05-28-1998	Caliper		
	CY	WO-9845481	10-15-1998	Caliper		
	CZ	WO-9845929	10-15-1998	Caliper		
	DA	WO-9846438	10-22-1998	Caliper		
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	DC	WO-9855852	12-10-1998	Caliper		
	DD	WO-9856505	12-17-1998	Caliper		

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DE	WO-9856956	12-17-1998	Caliper	
DF	WO-9900649	01-07-1999	Caliper	
DG	WO-9910735	03-04-1999	Caliper	
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DJ	WO-9919056	04-22-1999	Caliper	
DK	WO-9919516	04-22-1999	Caliper	
DL	WO-9929497	06-17-1999	Caliper	
DM	WO-9931495	06-24-1999	Caliper	
DN	WO-9934205	07-08-1999	Caliper	
DO	WO-9943432	09-02-1999	Caliper	
DP	WO-9944217	09-02-1999	Caliper	
DQ	WO-9956954	11-11-1999	Caliper	
DR	WO-0009753	02-24-2000	Caliper	
DS	EP 376611	07-04-1990	Leland Stanford Junior University	
DT	EP 620432	10-19-1994	CIBA-GEIGY AG	
DU	JP-10-53099	03-05-1998	Hitachi, Ltd.	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS				
Examiner Initials	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume/issue number(s), publisher, city and/or country where published.	T	
	DV	BESKIN et al. "On the mechanism of the modular primer effect" <u>Nucleic Acids Research</u> (1995) 23 (15):2881-2885		
	DW	BOUSSE et al. "Parallelism in integrated fluidic circuits," <u>SPIE</u> (1998) 3259:179-186		
	DX	BRENNER, S. et al. "Gene expression analysis by massively parallel signature sequencing (MPSS) on microbead arrays". <u>NATURE BIOTECHNOLOGY</u> (2000) 18:630-634		
	DY	BRUCHEZ et al. "Semiconductor Nanocrystals as Fluorescent Biological Labels" <u>Science</u> (1998) 281:2013-2016		
	DZ	BULT et al. "Complete Genome Sequence of the Methanogenic Archaeon, <i>Methanococcus jannaschii</i> " <u>Science</u> (1996) 273:1058-1073		

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EA	CHEE et al. "Accessing Genetic Information with High-Density DNA Arrays" Science (1996) 274:610-614	
EB	CHOU, Hou-Pu et al. "A microfabricated device for sizing and sorting DNA molecules", Proc. Natl. Acad. Sci (1999) 26:11-13	
EC	COHEN, C.B. et al., "A Microchip-Based Enzyme Assay for Protein Kinase A," Anal. Chem. (1999) 273:89-97	
ED	COUTLEE et al. "Nonisotopic Detection of RNA in an Enzyme Immunoassay Using a Monoclonal Antibody against DNA-RNA Hybrids" Analytical Biochemistry (1989) 181:153-162	
EE	DASGUPTA, P.K. et al., "Electroosmosis: A Reliable Fluid Propulsion System for Flow Injection Analysis," Anal. Chem. (1994) 66:1792-1798	
EF	DRMANAC et al. "Accurate sequencing by hybridization for DNA diagnostics and individual genomics." Nature Biotechnology (1998) 16:54-58.	
EG	DRMANAC et al. "Sequencing of Megabase Plus DNA by Hybridization: Theory of the Method" Genomics (1989) 4:114-128	
EH	ECKSTEIN et al. "Phosphorothioates in molecular biology" Trendes in Blochem (1989) 14:97	
EI	EFFENHAUSER et al. "Glass Chips for High-Speed Capillary Electrophoresis Separations with Submicrometer Plate Heights" Anal. Chem (1993) 65:2637-2642	
EJ	EFFENHAUSER et al. "High-Speed Separation of Antisense Oligonucleotides on a Micromachined Capillary Electrophoresis Device." Anal. Chem. (1994) 66:2949-2953.	
EK	FAN et al. "Micromachining of Capillary Electrophoresis Injectors and Separators on Glass Chips and Evaluation of Flow at Capillary Intersection. Anal.Chem. (1994) 66:177-184.	
EL	FLEISCHMANN et al. Science (1995) 269:496-512	
EM	FODOR et al. "Light-Directed, Spatially Addressable Parallel Chemical Synthesis" Science (1991) 251:767-777	
EN	FODOR "Genes, chips and the Human Genome" FASEB Journal (1997) 11:121-121	
EO	FODOR "Massively Parallel Genomics" Science (1997) 277:393-395	
EP	FRASER et al. "The Minimal Gene Complement of Mycoplasma genitalium" Science (1995) 270:397-403	
EQ	GAY et al. J. Chem. Soc. (1970) 8:1123	
ER	HARRIS, J.M "Laboratory Synthesis of Polyethylene Glycol Derivatives" Rev. Macromol. Chem. Phys., (1985) C25(3):325-373	
ES	HARRISON et al. "Capillary Electrophoresis and Sample Injection Systems Integrated on a Planar Glass Chip Anal. Chem. (1992) 64:1926-1932.	

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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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ET	HARRISON et al. "Micromachining a Miniaturized Capillary Electrophoresis-Based Chemical Analysis System on a Chip." Science (1993) 261:895-897	
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EV	ISHII et al. "Bead-Based Sandwich Hybridization Characteristics of Oligonucleotide-Alkaline Phosphatase Conjugates and Their Potential for Quantitating Target RNA Sequences" Bioconjugate chem. American Chemical Society (1993) 4:34-41	
EW	JACOBSON et al. "Open Channel Electrochromatography on a Microchip" Anal. Chem. (1994) 66:2369-2373	
EX	JACOBSON et al. "Precolumn Reactions with Electrophoretic Analysis Integrated on Microchip" Anal. Chem. (1994) 66:4127-4132	
EY	JACOBSON et al. "Effects of Injection Schemes and Column Geometry on the Performance of Microchip Electrophoresis Devices" Anal. Chem. (1994) 66:1107-1113	
EZ	JACOBSON et al. "High Speed Separations on a Microchip." Anal. Chem. (1994) 66:1114-1118	
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FB	JACOBSON, S.C. et al., "Fused Quartz Substrates for Microchip Electrophoresis," Anal. Chem. (1995) 67:2059-2063	
FC	KOPF-SJLL et al. "Complexity and performance of on-chip biochemical assays," SPIE (1997) 2978:172-179 February 10-11	
FD	MANZ, A. et al., "Electroosmotic pumping and electrophoretic separations for miniaturized chemical analysis systems," J. Micromech. Microeng. (1994) 4:257-265	
FE	MATHE, C. et al. "Phosphopeptide Prodrug Bearing an S-Acyl-2thioethyl Enzyme-Labile Phosphate Protection" J.Org. Chem. (1998) 63: 8547-8550 (1998)	
FF	NIE et al. "Quantum Dot Bioconjugates for Ultrasensitive Nonisotopic Detection" Science (1998) 281:2016-2018.	
FG	NYREN et al "Solid Phase DNA Minisequencing by an Enzymatic Luminometric Inorganic Pyrophosphate Detection Assay," Anal. Biochem. (1993) 208:171-175	
FH	PORTER et al. "Direct PCR sequencing with boronated nucleotides" Nucleic Acids Research (1997) 25 (8):1611-1617	
FI	RAJA et al. "DNA sequencing using differential extension with nucleotide subsets (DENS)" Nucleic Acids Research (1997) 25 (4):800-805	

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FJ	RAMSEY, J.M. et al., "Microfabricated chemical measurement systems," Nature Med. (1995) 1:1093-1098	
FK	RICH et al. "Preparation of a New o-Nitrobenzyl Resin for Solid-Phase Synthesis of tert-Butyloxycarbonyl-Protected Peptide Acids" J. Am. Chem. Soc. (1975) 97:1575-1579.	
FL	RONAGHI, M. et al. "Real-Time DNA Sequencing Using Detection of Pyrophosphate Release" Anal. Biochem. (1996) 242:84-89	
FM	RONAGHI, M. et al. "A Sequencing Method Based on Real Time Pyrophosphate" Science (1998) 281:363-364	
FN	SANGER et al. "DNA Sequencing with chain-terminating inhibitors" Proc. Nat. Acad. Sci., USA (1977) 74:5463-5467	
FO	SEILER, K. et al., "Planar Glass Chips for Capillary Electrophoresis: Repetitive Sample Injection, Quantitation, and Separation Efficiency," Anal. Chem. (1993) 65:1481-1488	
FP	SEILER, K. et al., "Electroosmotic Pumping and Valveless Control of Fluid Flow Within a Manifold of Capillaries on a Glass Chip," Anal. Chem. (1994) 66:3485-3491	
FQ	SEILER, K. et al. "Micromachining a Miniaturized Capillary Electrophoresis-Based Chemical Analysis System on a Chip" Mit Gebiete Lebensm. Hyg. (1994) 85:59-68	
FR	SUNDBERG, S. A., "High-throughput and ultra-high-throughput screening: solution - and cell-based approaches," Current Opinions in Biotechnology 2000, 11:47-53	
FS	TOMB et al. "The complete genome sequence of the gastric pathogen Helicobacter pylori" Nature (1997) 539-547	
FT	TYAGI, S. "Taking a census of mRNA populations with microbeads", NATURE. (June 2000) 18:597-598.	
FU	WANG "Solid Phase Synthesis of Protected Peptides via photolytic Cleavage of the a-Methylphenacyl Ester Anchoring Linkage J. Org. Chem. (1976) 41:3258	
FV	ZALIPSKY et al. "Attachment of Drugs to Polyethylene Glycols" Eur. Polym. J., (1983) 19(12), 1177-1183	
FW	http://www.dev.nhgri.nih.gov/Dev/Projects/Grants/v7/test.cgi	

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